LAMPIRAN

Lampiran 1. Hasil Analisis Semen Segar Kambing Boer.

Penampungan	M %	V %	A %	konsentrasi	warna	volume	Konsistensi	pH
1	70	76,19	3,1	254	putih krem	0,9	Encer	6
2	75	83,78	4,23	261		1		7
rata-rata	72,5	79,99	3,67	257,5		0,95		6,5
SD	3,54	5,37	0,79	4,95		0,07		0,71

Keterangan :
M : Motilitas
V : Viabilitas
A : Abnormalitas

Lampiran 2. Analisis Ragam Motilitas Sebelum Pembekuan (%)

P0	P1	P2	P3
55	50	45	40
60	55	50	45

$\sum$ Total $= 55+50+45+...+50+45 = 400$

$\sum Yij^2 = 55^2+50^2+45^2+...+50^2+45^2 = 20300$

FK $= (\sum total)^2 / n$

$= 400^2 / 8$

$= 160000 / 8$

$= 20000$

$JK_{perlakuan} = \frac{\text{(jumlah Kuadrat masing−masing perlakuan)}}{\text{jumlah ulangan}} - FK$

$= \frac{(115^2 + 105^2 + 95^2 + 85^2)}{2} - 20000$

$= 250$

JK_{total} = (jumlah kuadrat masing – masing pengamatan) – FK

= $(55^2+50^2+45^2+...+50^2+45^2) - 20000$

= $20300 - 20000$

= 300

JK_{error} = $JK_{total} - JK_{perlakuan}$

= 300 – 250

= 50

Tabel ANOVA

Sumber Ragam	db	JK	KT	F hitung	F tabel	
					0,05	0,01
Perlakuan	3	250	83,33	6,67	6,59	16,69
Error	4	50	12,5			
Total	7	300				

Lampiran 3. Analisis Ragam Viabilitas Sebelum Pembekuan (%)

P0	P1	P2	P3
61,38	60,38	58,33	56,99
70,29	67,87	50,5	51,45

$\sum$ Total = 61,38+60,38+58,33+...+50,5+51,45 = 477,19

$\sum Yij^2$ = $61,38^2$+$60,38^2$+$58,33^2$+...+$50,5^2$+$51,45^2$ = 28807,87

FK = $(\sum total)^2 / n$

= $477,19^2 / 8$

= 227710,3 / 8

= 28463,79

$JK_{perlakuan}$ = $\frac{\text{(jumlah Kuadrat masing−masing perlakuan)}}{\text{jumlah ulangan}} - FK$

= $\frac{(131,67^2 + 128,25^2 + 108,83^2 + 108,44^2)}{2} - 28463,79$

= 230,3399

JK_{total} = (jumlah kuadrat masing – masing pengamatan) – FK

= $(61{,}38^2+60{,}38^2+58{,}33^2+...+50{,}5^2+51{,}45^2) - 28463{,}79$

= 28807,87 – 28463,79

= 344,0843

JK_{error} = $JK_{total} - JK_{perlakuan}$

= 344,0843 – 230,3399

= 113,7444

Tabel ANOVA

Sumber Ragam	db	JK	KT	F hitung	F tabel	
					0,05	0,01
Perlakuan	3	230,3399	76,78	2,7	6,59	16,69
Error	4	113,7444	28,44			
Total	7	344,0843				

Lampiran 4. Analisis Ragam Abnormalitas Sebelum Pembekuan (%)

P0	P1	P2	P3
5,39	6,93	5,5	7,41
7,59	4,49	5,4	7,33

$\sum$ Total $= 5,39+6,93+5,5+...+5,5+7,33 = 50,04$

$\sum Yij^2 = 5,39^2+6,93^2+5,5^2+...+5,5^2+7,33^2 = 322,8922$

$FK = (\sum total)^2 / n$

$= 50,04^2 / 8$

$= 2504,002 / 8$

$= 313,0002$

$$JK_{perlakuan} = \frac{(\text{jumlah Kuadrat masing}-\text{masing perlakuan})}{\text{jumlah ulangan}} - FK$$

$$= \frac{(12,98^2 + 11,42^2 + 10,9^2 + 14,74^2)}{2} - 313,0002$$

$= 4,487$

JK_{total} = (jumlah kuadrat masing – masing pengamatan) – FK

= $(5{,}39^2+6{,}93^2+5{,}5^2+...+5{,}5^2+7{,}33^2) - 313{,}0002$

= $322{,}8922 - 313{,}0002$

= $9{,}892$

JK_{error} = $JK_{total} - JK_{perlakuan}$

= $9{,}892 - 4{,}487$

= $5{,}405$

Tabel ANOVA

Sumber Ragam	db	JK	KT	F hitung	F tabel	
					0,05	0,01
Perlakuan	3	4,487	1,496	1,12	6,59	16,69
Error	4	5,405	1,351			
Total	7	9,892				

Lampiran 5. Data dan Analisis Statistik Motilitas Semen Beku

Perlakuan	Ulangan							Total perlakuan	Rataan	SD
	U1	U2	U3	U4	U5	U6	U7			
P0	5	5	5	10	10	10	5	50	7.14	2.67
P1	0	0	5	5	0	5	5	20	2.86	2.67
P2	0	5	5	0	0	0	5	15	2.14	2.67
P3	0	0	5	0	0	0	0	5	0.71	1.89
Total Ulangan	5	10	20	15	10	15	15	90		

a. Faktor Koreksi

FK $= (\sum \text{total})^2 / n$ atau $(\sum \text{total})^2 / r \times t$

$= (5 + 5 + 5 + 10 + \ldots + 0 + 0)^2 / 20$

$= (90)^2 / 28$

$= 289.29$

b. Jumlah Kuadrat

JK Total $= (5^2 + 5^2 + \ldots + 0^2 + 0^2) - 289.29$

$= 600 - 289.29$

$= 310.71$

JK Perlakuan $= \frac{(50^2 + 20^2 + 15^2 + 5^2)}{7} - 289.29$

$= \frac{3150}{7} - 289.29$

$= 450 - 289.29$

$= 160.71$

JK Galat = JK Total – JK Perlakuan

$= 310.71 - 160.71$

$= 150$

c. Tabel Sidik Ragam (ANOVA)

SK	Db	JK	KT	F hit	F 0.05	F 0.01
Perlakuan	3	160.71	53.57	8.57**	3.0087	4.718
Galat	24	150	6.25			
Total	27	310.71				

a. Uji Jarak Berganda Duncan

SE (Standart Efisien) = (√KTG /7)

= √ (6.25/7)

= √0.8942

= 0.9449

Tabel JND dan JNT

	2	3	4
JND 1 %	3.955	4.126	4.239
JNT 1%	3.7371	3.8987	4.0054

Tabel Perhitungan Notasi

Perlakuan	Rataan	Notasi
P3	0.71	a
P2	2.14	ab
P1	2.85	ab
P0	6.43	b

b. Hasil

Perlakuan	Rataan	Notasi
P0	6.43	b
P1	2.58	ab
P2	2.14	ab
P3	0.71	a

Lampiran 6. Data dan Analisis Statistik Viabilitas Semen Beku

Perlakuan	Ulangan							Total perlakuan	Rataan	SD
	U1	U2	U3	U4	U5	U6	U7			
P0	8.06	9.23	4.96	13.66	10.49	11.5	9.22	67.12	9.59	2.74
P1	4.67	4.52	9.5	5.92	4.7	5.56	6.07	40.94	5.85	1.73
P2	3.67	5.78	5.01	4.12	2.51	3.91	7.93	32.93	4.70	1.76
P3	4.37	3.45	5	1.96	4.09	2.07	2.44	23.38	3.34	1.21
Total Ulangan	20.77	22.98	24.47	25.66	21.79	23.04	25.66	164.37		

a. Faktor Koreksi

FK $= (\sum \text{total})^2 / \text{n}$ atau $(\sum \text{total})^2 / \text{r x t}$

$= (8.06 + 9.23 + 4.96 + \ldots\ldots + 2.07 + 2.44)^2 / 28$

$= (164.37)^2 / 28$

$= 964.91$

b. Jumlah Kuadrat

JK Total = (jumlah kuadrat masing – masing pengamatan) – FK

$= (8.06^2 + 9.23^2 + \ldots + 2.07^2 + 2.44^2) - 964.91$

$= 1206.27 - 964.91$

$= 241.36$

JK Perlakuan $= \frac{(\text{jumlah Kuadrat masing} - \text{masing perlakuan})}{\text{jumlah ulangan}} - \text{FK}$

$= \frac{(67.12^2 + 40.94^2 + 32.93^2 + 23.38^2}{7} - 964.91$

$= \frac{7812.1873}{7} - 3395.62$

$= 1116.0268 - 3395.62$

$= 151.12$

JK Galat = JK Total – JK Perlakuan

$= 241.36 - 151.12$

$= 90.24$

c. Tabel Sidik Ragam (ANOVA)

SK	Db	JK	KT	F hit	F 0.05	F 0.01
Perlakuan	4	151.12	50.37	13.39**	3.0087	4.718
Galat	15	90.24	3.76			
Total	19	241.36				

a. Uji Jarak Berganda Duncan

SE (Standart Efisien) = (√KTG /7)
= √ (3.76/7)
= √0.5371
= 0.7329

Tabel JND dan JNT

	2	3	4
JND 1 %	3.955	4.126	4.239
JNT 1%	2.8986	3.0239	3.1067

Tabel Perhitungan Notasi

Perlakuan	Rataan	Notasi
P3	3.34	a
P2	4.7	a
P1	5.85	a
P0	9.59	bcd

b. Hasil

Perlakuan	Rataan	Notasi
P0	9.59	bcd
P1	5.85	a
P2	4.7	a
P3	3.34	a

Lampiran 7. Data dan Analisis Statistik Abnormalitas Semen Beku

Perlakuan	Ulangan							Total perlakuan	Rataan	SD
	U1	U2	U3	U4	U5	U6	U7			
P0	8.27	6.36	5.91	9.54	6.62	13.39	9.91	60		
P1	9.48	7.46	6.95	5.88	6.29	8.15	8.2	52.41		
P2	5.91	9.23	7.21	6.73	6.51	7.8	9.02	52.41		
P3	9.57	7.56	8.81	9.85	8.24	11.92	9.9	65.85		
Total Ulangan	33.23	30.61	28.88	32	27.66	41.26	37.03	230.67		

c. Faktor Koreksi

FK $= (\sum \text{total})^2 / \text{n}$ atau $(\sum \text{total})^2 / \text{r x t}$

$= (8.27 + 6.36 + 5.91 + \ldots + 8.24 + 11.92 + 9.9)^2 / 28$

$= (230.67)^2 / 20$

$= 1900.31$

d. Jumlah Kuadrat

JK Total = (jumlah kuadrat masing – masing pengamatan) – FK

$= (8.27^2 + 6.36^2 + \ldots + 11.92^2 + 9.9^2) - 3335.94$

= 1991.0819 – 1900.3089

= 90.77

JK Perlakuan $= \frac{(60^2 + 52.41^2 + 52.41^2 + 65.85^2)}{7} - 1900.3089$

$= \frac{13429.8387}{7} - 1900.3089$

= 1918.5483 – 1900.3089

= 18.24

JK Galat = JK Total – JK Perlakuan

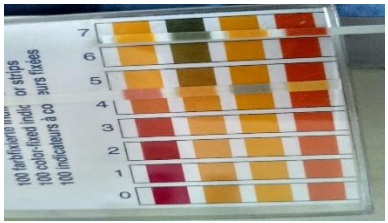
= 90.773– 18.2393

= 72.53

e. Tabel Sidik Ragam (ANOVA)

SK	Db	JK	KT	F hit	F 0.05	F 0.01
Perlakuan	3	18.24	6.079	2.012	3.0087	4.718
Galat	24	72.53	3.022			
Total	27	90.77				

Lampiran 8. Daftar gambar penelitian

a. 	b. 	c. 
d. 	e. 	f. 

Keterangan:

a.Pengamatan pH semen segar
b. Perlengkapan penampungan
c.*Waterbath*
d. Pengambilan semen beku pada suhu -80^{0}C
e. Memasukkan *Cryovail* kedalam alat Mr. Frosty®.
f. HTC, Haemocytometer dan pipet eritrosit skala1ml.